

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re the Application of:

Yoshio NAKAO

Serial No. 09/862,437

Group Art Unit: 2654

Confirmation No. 8890

Filed: May 23, 2001

Examiner: Abdelali Serrou

For: APPARATUS FOR READING A PLURALITY OF DOCUMENTS AND A METHOD  
THEREOF

**SUBSTITUTE APPEAL BRIEF**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

The following is submitted in response to the Notice of Non-Compliant Appeal Brief  
mailed March 5, 2007.

**I. Real Party in Interest**

The inventor Yoshio NAKAO assigned all rights in the subject application to FUJITSU LIMITED on May 7, 2001 according to the Assignment executed May 7, 2001 which was recorded December 12, 2001 at Reel 12360, Frames 290-292. Therefore, the real party in interest is FUJITSU LIMITED.

**II. Related Appeals and Interferences**

There are no related appeals or interferences known to Appellants, Appellants' legal representatives or the Assignee, FUJITSU LIMITED, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **III. Status of Claims**

Claims 1-12 are pending in the application and claims 1-12 stand rejected under 35 USC § 103(a).

### **IV. Status of Amendments**

No Amendment was filed in response to the February 27, 2006 Office Action.

### **V. Summary of Claimed Subject Matter**

The present invention is directed to a system supporting comparative reading of related documents by presenting related passages in the documents to be compared in a form that is easily understood. This is accomplished by a "document reading apparatus presenting a plurality of documents designated as reading documents by a user" (claim 1, lines 1-2) as described, e.g., on pages 11-19 of the application with reference to Figs. 1-3.

Independent apparatus claim 1 recites a document reading apparatus that includes a thematic hierarchy recognizing device recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document using similarly graded topics (claim 1, lines 3-7). An example of a thematic hierarchy recognizing device is described in the paragraph at page 11, lines 8-23. This paragraph explains that

thematic hierarchy means a hierarchical structure corresponding to the "aboutness" of a text. Each of its layers expresses a disjoint segmentation of a text according to topics of certain grading. Namely, each layer consists of several segments that, taken together, compose the entire text and that individually describe identical or related topics

(application, page 11, lines 10-17).

The basic configuration of a document reading apparatus illustrated in Fig. 2 includes a thematic hierarchy detector 25 which corresponds to the thematic hierarchy recognizing device 1 of Fig. 1 (see page 15, lines 22-25). The "thematic hierarchy detector 25 automatically decomposes each of the document 11 into segments of approximately the same size using a thematic boundary detector 26" (application, page 16, line 24 to page 17, line 2) which "recognizes a continuous portion with a low lexical cohesion score as a candidate section of a thematic boundary" (application, page 17, lines 9-11). Details of the operation of thematic hierarchy detector 25 and thematic boundary detector 26 are provided at page 24, line 14 to

page 46, line 23 with reference to the flowcharts of Figs. 11, 12, 15, and 17 and the examples illustrated in Figs. 13, 14, 16 and 18-21.

The document reading apparatus recited in claim 1 also includes "a topic extracting device extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies" (claim 1, lines 8-9). An example is the topic extracting device 2 (Fig. 1) described in the paragraph spanning pages 11 and 12 of the application. As explained in this paragraph, "a plurality of thematic hierarchies that individually correspond to a plurality of documents are compared, and the combination of topics having strong relevance is extracted to be output as a common topic among a plurality of documents" (application, page 12, lines 2-6). See, also, the description of topic extractor 27 at page 17, lines 17-22, which, as noted at page 15, lines 22-25, corresponds to topic extracting device 2. Details of the operation of topic extractor 27 are provided at page 46, line 24 to page 52, line 3 with reference to the flowchart of Fig. 22 and the examples illustrated in Figs. 23 and 24.

The document reading apparatus recited in claim 1 also includes "a topic relation presenting device taking out a description part corresponding to the extracted topic from each of the plurality of documents and outputting the taken-out description parts as related passages among of the documents" (claim 1, last 3 lines). An example of a topic relation presenting device is described in the paragraph at page 12, lines 12-15. Additional details are provided with respect to the output unit 28 (Fig. 2) described in the paragraph spanning pages 17 and 18, which, as noted at page 15, line 22 to page 16, line 1, corresponds to topic relation presenting device 3 of Fig. 1. Details of the operation of output unit 28 are provided at page 52, line 4 to page 58, line 11 with reference to the flowcharts of Figs. 26 and 27 and the examples illustrated in Figs. 25 and 28-33.

The computer-readable storage medium of independent claim 9 is recited as "storing a program for a computer that presents a plurality of documents designated as reading documents by a user, [where] the program causes the computer to perform" (claim 9, lines 1-3) the operations performed by the document reading apparatus recited in claim 1, except for the following differences. Claim 9 recites that segmentation of a document is "according to similarly graded topics" rather than "using similarly graded topics" as recited in claim 1; "parts" (claim 1, line 12) is "part" in claim 9; and the words "plurality of" (claim 1, line 11) and "of" (claim 1, line 12) are not included in claim 9. As discussed in the paragraph at page 20, lines 5-11, the program stored on a computer-readable storage medium is executed to perform the operations described on pages 11-17.

Independent propagation signal claim 10 recites the same operations as claim 9, except that the extracting is of "a topic that commonly appears **on**" (claim 10, line 8, emphasis added) the documents, rather "in" the documents as recited in claim 9; the word "plurality" appears on line 11 of claim 10, but is not used in claim 9; and the use of the word "parts" like claim 1, instead of "part" as in claim 9. It is submitted that these differences are not significant and the description of the operations of the devices on pages 11-17 likewise apply to claim 10.

Independent document presenting method claim 11 recites the same operations as claim 10, except that the extracting is of "a topic that commonly appears **in**" (claim 11, line 7, emphasis added) the documents, rather "on" the documents as recited in claim 10. Therefore, the description of the operations of the devices on pages 11-17 likewise apply to claim 11.

### **Means-Plus-Function Limitations**

Claim 12 recites means-plus-function limitations. Specifically, claim 12 recites "thematic hierarchy recognizing means for recognizing a thematic hierarchy of each of the plurality of documents" (claim 12, lines 6-7). As discussed above, the process of recognizing a thematic hierarchy performed by thematic hierarchy recognizing device 1 (Fig. 1), and thematic hierarchy detector 25 and thematic boundary detector 26 (Fig. 2) are described at page 11, lines 8-23 and page 16, line 24 to page 17, line 16 with additional details at page 24, line 14 to page 46, line 23 with reference to Figs. 11-21.

Claim 12 also recites "topic extracting means for extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies" (claim 12, lines 8-9). As discussed above, the process of extracting a topic by topic extracting device 2 (Fig. 1) and topic extractor 27 (Fig. 2) is described in the paragraph spanning pages 11 and 12 and the paragraph at page 17, lines 17-22, with additional details provided at page 46, line 24 to page 52, line 3 with reference to Figs. 22-24.

Claim 12 also recites "topic relation presenting means for taking out a description part corresponding to the extracted topic from each of the plurality documents and outputting the taken-out description parts as related passages among the documents" (claim 12, last 3 lines). As discussed above, the process of outputting description parts as related passages by topic relation presenting device 3 (Fig. 1) and output unit 28 (Fig. 2) is described in the paragraph at page 12, lines 12-15 and the paragraph spanning pages 17 and 18, with additional details provided at page 52, line 4 to page 58, line 11 with reference to Figs. 25-33.

## VI. Grounds of Rejection to be Reviewed on Appeal

In the final Office Action dated February 27, 2006, the Examiner rejected claims 1-12 under 35 USC § 103(a). Specifically, claims 1, 3-7 and 9-12 were rejected as unpatentable over an article by Mani et al. (Reference AK in the Information Disclosure Statement filed June 15, 2001) in view of U.S. Patent Nos. 5,960,383 to Fleischer; 5,659,742 to Beattie et al. and 6,560,620 to Ching; and claims 2 and 8 were rejected as unpatentable over Mani et al. in view of Fleischer and Ching and further in view of U.S. Patent No. 6,772,165 to O'Carroll. At issue is whether these combinations of references teach or suggest all of the limitations recited in the claims.

## VII. Argument

First, the teachings of the references will be discussed, as there is dispute between the Appellants and the Examiner regarding the extent of the teachings in the prior art. Following that will be a discussion of some of the patentable distinctions recited in the claims over what is disclosed in the prior art.

### Cited Prior Art:

#### **Mani et al.**

Mani et al. is directed to an "approach" for summarizing similarities and differences among related documents. As best as can be understood from the abbreviated notation used by the Examiner, what was cited in Mani et al. were the words "extracting information content" on page 357 in the "Introduction" (section 1) on line 7 of column 1; the words "text summarization is to be able to summarize the similarities and differences in information *content* among these documents. A variety of approaches exist for extracting" on lines 5-8 of column 2 on page 357 in the Introduction; and the statement that "the work described here is to provide a tool for analyzing document collections such as multiple news stories about an event or a sequence of events" (page 358, column 1, lines 13-16). The June 24, 2005 and February 27, 2006 Office Actions asserted that these statements amounted to a disclosure of a "multi-document reading apparatus" (February 27, 2006 Office Action, page 4, line 5); a "topic extraction apparatus extracting a topic that commonly appears in the plurality of documents" (February 27, 2006 Office Action, page 4, lines 7-8); and a "storage medium to store the program that causes the computer to perform" (February 27, 2006 Office Action, page 4, line 9). However, as discussed in the Amendment received by the U.S. Patent and Trademark Office on

April 20, 2005, no mention of such apparatuses or even a storage medium have been found in the cited portions or elsewhere in Mani et al.

The last paragraph on page 2 of the February 27, 2006 Office Action in the "Response to Arguments" section cited "page 358, § 2, lines 1-10" of Mani et al. as teaching "a tool that analyzes, detects differences and summarizes a plurality of documents" (February 27, 2006 Office Action, page 2, last 2 lines). It is unclear what is meant by "§ 2" in this citation. No apparatus or device can be found in the first ten lines following the heading "2. Overall Approach to Summarization" or the first ten lines of column 2 or indeed, anywhere else on page 358 of Mani et al. The word "tool" does appear on line 14 in column 1 of Mani et al., but no details of the hardware that forms this "tool" are provided. Thus, Mani et al. lacks a disclosure of the devices recited in the body of claim 1.

### **Fleischer**

Fleischer is directed to extraction of key sections from texts using automatic indexing techniques. As discussed in the April 20, 2005 Amendment, in the rejections the Examiner apparently cited column 1, lines 34, 35 and 40-45 in the Summary of the Invention section of Fleischer (although as noted below, the Advisory Action cited portions of the Detailed Description). As stated in the cited portion of the Summary of the Invention, the extraction disclosed by Fleischer includes "dividing ... [a] document into ... identifiable sections, comparing words in each ... identifiable section ... with the document noun phrase list and providing a count associated with each ... identifiable section" (column 1, lines 41-45). These operations are described at column 4, line 39 to column 5, line 47 with reference to the flowchart in Fig. 5 and in somewhat more detail from column 2, line 63 to column 4, line 38. As illustrated in Fig. 5, first a "noun phrase list characteristic of document contents" (step 42 in Fig. 5) is generated using "a natural language processor, Clarit" (column 4, lines 44-45). In step 44, "the document may be divided into lines, sentences, paragraphs, or chapters" (column 4, last line to column 5, line 1), which form "sections" defined by a user (see column 5, lines 1-4) that "may correspond, for example, to chapters, paragraphs or sentences" (column 3, lines 56-57, emphasis added). Apparently, in the disclosed embodiment, "sections" correspond to paragraphs, as "the analysis is done on a paragraph basis" (column 4, lines 24-25). In step 46, "the document sections are compared against the list of noun phrases" (column 5, lines 5-6) and for "each match of a phrase from the noun phrase list to a phrase appearing in the document part a count is incremented, the final count resulting in a score for that document section" (column 5, lines 8-11).

### **Beattie et al.**

Beattie et al. is directed to storing multi-media information for retrieval. As discussed in the Request for Reconsideration received by the U.S. Patent and Trademark Office on July 31, 2006, the cited portion of Beattie et al. only states that the "session server 114 retrieves (from database 118) a size (from field 419) for each document identification number" (column 18, lines 59-61) and "transmits this size information ... to PC 104 where it is displayed as size information 343b" (column 18, lines 63-66). As apparent from Fig. 4A where an example of size information 343b is shown, "this size information" is an amount of storage required for the document, in this case, "14K."

### **Ching**

Ching is directed to a hierarchical document comparison system for displaying different versions of a document, so that changes in the document can be easily observed. As discussed in the April 20, 2005 Amendment, the cited Fig. 8 of Ching shows eleven lines of text in which a single change from "4.1.4" to "4.1.5" occurs, while the cited portion of column 2 (lines 34-38) describes a display of documents which "lists the identified segments from the first document and ... the identified segments from the second document" (column 2, lines 35-38) side-by-side.

### **O'Carroll**

O'Carroll is directed to an electronic document processing system for merging source documents on a node-by-node basis to generate a target document. As discussed in the April 20, 2005 Amendment, the text cited by the Examiner (column 1, lines 50-55) is the first paragraph of the Summary of the Invention) which describes generating a target document from a source document by "merging the source document with at least one other source document" (column 1, lines 53-54). The cited drawings, Figs. 8-11, illustrate hierarchically arranged bubbles containing a small amount of text which are described in the Brief Description of the Drawings as "diagrams of trees to illustrate merging operations" (column 4, lines 26-27). In the Description of the Embodiments, the only reference to FIG 8 is the paragraph at column 5, lines 6-13 which appears to be a description of Fig. 7(c). A "merging operation is ... described in more detail with reference to FIGS. 9-10, and 11" (column 6, lines 36-37) in O'Carroll. The description of the merging operation continues to the middle of column 12.

## **Distinctions over Cited Art**

### **Claims 1, 3-7 and 9-12**

As supplemented by the additional portions of Fleischer cited in the Advisory Action that were not cited in the June 24, 2005 and February 27, 2006 Office Actions, the Appellant understands the Examiner's position as follows: Mani et al. in the Abstract and Introduction discloses devices based on use of the word "tool" and a few lines describing a method; Fleischer at column 3, lines 56-57 and column 4, lines 1-30 and 44-52 suggests "'detecting topics of various grading' for recognizing 'a thematic hierarchy' ..., [where] document sections, that correspond to chapters, paragraphs, and sentences ..., are ranked according to scores ... that depend on the number of sections within a document" (Advisory Action, continuation of 11, lines 9-12); Beattie et al. in column 18, lines 59-63 and Fig. 1 discloses a "session server, Fig. 1, element 114) that detects the size of documents" (February 27, 2006 Office Action, page 5, lines 1-2); Ching in column 2, lines 34-38 and Fig. 8 discloses "a computer that compares the content of two different documents and displays the taken-out description (identified segment) from the first topic on one side and displays the identified segment from the second document on the other side" (February 27, 2006 Office Action, page 5, lines 9-11); and O'Carroll in column 1, lines 50-55 and Figs. 8-11 discloses "means for processing a source document to provide a target document, ... [including] means for merging the source document with at least one other source document to provide the target document" (February 27, 2006 Office Action, page 8, lines 5-7).

First, it is submitted that Mani et al. is inadequate as a primary reference. As discussed in the April 20, 2005 Amendment and summarized above, Mani et al. does not disclose any of the devices recited in the body of claim 1. As a result, Mani et al. does not provide a proper foundation for the rejection.

Moreover, the February 27, 2006 Office Action acknowledged that "[n]either Mani nor Fleischer [nor presumably Ching] teach an apparatus that detects topics of various sizes" (February 27, 2006 Office Action, page 4, last line). This position was apparently modified by the August 21, 2006 Advisory Action which asserted that column 4, lines 1-15 of Fleischer suggests "detecting topics of various grading" as recited in claim 1.

It is submitted that the February 27, 2006 Office Action was correct in acknowledging that Fleischer does not disclose "detecting topics of various grading" (claim 1, line 4) where the term "various grading" should be interpreted in light of the specification as approximately equivalent to "various sizes" as discussed in the July 31, 2006 Request for Reconsideration.



The portions of Fleischer cited in the Advisory Action do not support the assertion that this feature is disclosed or suggested by Fleischer. As discussed in the first paragraph on page 7 of the July 31, 2006 Request for Reconsideration, the procedure disclosed by Fleischer only recognizes a document element, such as a section, where the "sections may correspond, for example, to chapters, paragraphs or sentences" (column 3, lines 56-57, emphasis added). To be able to detect "various grading", i.e., different sizes of text, the combined prior art would have to disclose or suggest detecting a set of successive paragraphs (or some other unit) related to a single topic. As discussed in the July 31, 2006 Request for Reconsideration, nothing has been cited in Fleischer, including the portions of columns 3 and 4 which were newly cited in the Advisory Action, that suggests detection of topics as a sequence of paragraphs (or chapters or sentences, for that matter).

Furthermore, nothing has been cited or found in any of the other cited references that suggests detection or extraction of topics of various grading or sizes. Prior to the apparent modification of the Examiner's position in the Advisory Action, Appellant understood that the "session server" described at column 18, lines 59-63 and illustrated as element 114 in Fig. 1 of Beattie et al. was cited as something "that detects the size of documents" (February 27, 2006 Office Action, page 5, lines 1-2). However, as discussed in the July 31, 2006 Request for Reconsideration, the cited portion of Beattie et al. only states that the "session server 114 retrieves (from database 118) a size (from field 419) for each document identification number" (column 18, lines 59-61) and "transmits this size information ... to PC 104 where it is displayed as size information 343b" (column 18, lines 63-66). As apparent from Fig. 4A where an example of size information 343b is shown, "this size information" is an amount of storage required for the document, in this case, "14K" which is useless in determining "a thematic hierarchy" of the documents, as recited in claim 1.

Thus, it is submitted that the combination of Mani et al.; Fleischer; Beattie et al. and Ching (with or without O'Carroll) does not disclose "a topic extracting device extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies" (claim 1, lines 8-9). Even if Mani et al. disclosed a topic extracting device, as acknowledged by the Examiner Mani et al., does not disclose topic extraction based on "thematic hierarchies" and neither Fleischer nor Beattie et al. discloses this feature either, because claim 1 requires "recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading" (claim 1, lines 3-4) and, as discussed

above, nothing has been cited or found in any of the references used to reject the claims that teaches or suggests this feature.

It is submitted that claim 1, as well as claims 3-7 which depend therefrom, patentably distinguish over the applied art, for at least the reasons discussed above. Like claim 1, claims 9-12 recite "recognizing a thematic hierarchy of each of the plurality of documents" (claims 9 and 10, line 4; claim 11, line 3; and claim 12, lines 6-7). Therefore, it is submitted that claims 9-12 patentably distinguish over the applied art for at least the reasons discussed above with respect to claim 1.

### **Claims 2 and 8**

In item 15 on pages 7-8 of the February 27, 2006 Office Action claims 2 and 8 were rejected as obvious from the combination of Mani et al., Fleischer, Ching and O'Carroll, without using Beattie et al., even though Beattie et al. was used in the rejection of claim 1 from which claims 2 and 8 depend. Nothing was cited in O'Carroll providing the feature allegedly taught by Beattie et al. and acknowledged to be missing from Mani et al. and Fleischer (and presumably Ching). The Advisory Action did not modify this rejection. Therefore, it is submitted that claims 2 and 8 patentably distinguish over Mani et al., Fleischer, Ching and O'Carroll which were used in rejecting claims 2 and 8 for the reasons recognized by the Examiner in not rejecting claim 1 over Mani et al., Fleischer and Ching alone. Furthermore, it is submitted that claims 2 and 8 patentably distinguish over the combination of Mani et al., Fleischer, Ching, O'Carroll and Beattie et al. for at least the reasons discussed above with respect to claim 1.

The Advisory Action responded to the arguments in the first paragraph on page 8 of the July 31, 2006 Request for Reconsideration by asserting

it is obvious that Mani calculates [a] relevance score between topics, as shown in Fig. 1, wherein two documents are represented by two different graphs, each graph has its own node, and each node has a weight (a value), and the two different weights are compared, with reference to an inherent threshold value, to present the summary of similarities and differences

(Advisory Action, continuation of 11, lines 27-29). Contrary to the assertions in the above quotation, it is submitted that it is not obvious from Fig. 1 of Mani et al. (which was cited for the first time in the Advisory Action) that Mani et al. "calculates a relevance score between topics of the topic set based on lexical similarity of description parts corresponding to each topic of the topic set" (claim 2, lines 3-4) or "merg[es] the contents of the reference document with description parts of another document related to the reference document" (claim 8, lines 3-4). The level of detail recited in claims 2 and 8 is simply not illustrated in Fig. 1 of Mani et al. which

merely contains boxes labeled "Reweight" and "Compare" as operations performed in a "Refinement" phase. By asserting that Mani et al. discloses the limitations recited in claims 2 and 8, the Examiner is either glossing over the limitations recited in these claims or reading more into Fig. 1 than would one of ordinary skill in the art. It is possible that the text of Mani et al., describing Fig. 1 or elsewhere, teaches or suggests what is recited in claims 2 and 8, but that text has not been cited by the Examiner and has not been found by the Appellant.

For the additional reasons set forth above, it is submitted that claims 2 and 8 further patentably distinguish over the applied art.

### **Summary of Arguments**

For the reasons set forth above and in the April 20, 2005 Amendment and July 31, 2006 Request for Reconsideration during prosecution of this application, it is submitted that claims 1-12 patentably distinguish over Mani et al. in view of Fleischer; Beattie et al. and Ching and further in view of O'Carroll. Thus, it is respectfully submitted that the Examiner's final rejection of the claims is without support and, therefore, erroneous. Accordingly, the Board of Patent Appeals and Interferences is respectfully urged to so find and to reverse the Examiner's final rejection.

If any additional fees are required, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: March 12, 2007

By: /Richard A. Gollhofer/  
Richard A. Gollhofer  
Registration No. 31,106

1201 New York Avenue, NW, Suite 700  
Washington, D.C. 20005  
Telephone: (202) 434-1500  
Facsimile: (202) 434-1501

## **VIII. Claims Appendix**

1. A document reading apparatus presenting a plurality of documents designated as reading documents by a user, comprising:

a thematic hierarchy recognizing device recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document using similarly graded topics;

a topic extracting device extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies; and

a topic relation presenting device taking out a description part corresponding to the extracted topic from each of the plurality of documents and outputting the taken-out description parts as related passages among of the documents.

2. The document reading apparatus according to claim 1, wherein regarding a topic set that consists of topics of various grading in the recognized thematic hierarchies, the topic extracting device calculates a relevance score between topics of the topic set based on lexical similarity of description parts corresponding to each topic of the topic set, and extracts a topic set having a relevance score equal to or more than a threshold that is set based on inclusive relationship of topics.

3. The document reading apparatus according to claim 1, wherein the topic relation presenting device presents the taken-out description parts as the related passages side by side.

4. The document reading apparatus according to claim 3, wherein the topic relation presenting device presents the related passages and original documents in two windows, one of the windows including the related parts side by side and the other including the original documents side by side.

5. The document reading apparatus according to claim 3, wherein the topic relation presenting device presents summaries of the related passages.

6. The document reading apparatus according to claim 5, wherein the topic relation presenting device presents summaries of the related passages and original documents in two windows, one of the windows including the summaries side by side and the other including the original documents side by side.

7. The document reading apparatus according to claim 3, wherein the topic relation presenting device presents a drawing showing a plurality of thematic hierarchies corresponding to the plurality of documents and a correspondence relationship between the plurality of thematic hierarchies based on the plurality of related passages, and a designated part of the plurality of documents in accordance with an instruction from the user given on the drawing.

8. The document reading apparatus according to claim 1, wherein the topic relation presenting device sets one document among the plurality of documents as a reference document, produces a new integrated document by merging the contents of the reference document with description parts of another document related to the reference document, and outputs the integrated document.

9. A computer-readable storage medium storing a program for a computer that presents a plurality of documents designated as reading documents by a user, the program causes the computer to perform:

recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document according to similarly graded topics;

extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies; and

taking out a description part corresponding to the extracted topic from each of the documents and outputting the taken-out description part as related passages among the documents.

10. A propagation signal propagating a program to a computer that presents a plurality of documents designated as reading document by a user, the program causes the computer to perform:

recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document according to similarly graded topics;

extracting a topic that commonly appears on the plurality of documents based on the recognized thematic hierarchies; and

taking out a description part corresponding to the extracted topic from each of the plurality documents and outputting the taken-out description parts as related passages among the documents.

11. A document presenting method of presenting a plurality of documents designated as reading documents by a user, comprising:

recognizing a thematic hierarchy of each of the plurality of documents by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document according to similarly graded topics;

extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies; and

taking out a description part corresponding to the extracted topic from each of the plurality documents and outputting the taken-out description parts as related passages among the documents.

12. A document reading apparatus presenting a plurality of documents designated as reading documents by a user, comprising by comprehensively detecting topics of various grading that are included in each of the documents, and by composing the topics in a form of a thematic hierarchy, where each layer of the thematic hierarchy expresses a segmentation of a document according to similarly graded topics:

thematic hierarchy recognizing means for recognizing a thematic hierarchy of each of the plurality of documents;

topic extracting means for extracting a topic that commonly appears in the plurality of documents based on the recognized thematic hierarchies; and

topic relation presenting means for taking out a description part corresponding to the extracted topic from each of the plurality documents and outputting the taken-out description parts as related passages among the documents.

## **IX. Evidence Appendix**

(None)

**X. Related Proceedings Appendix**

(None)